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Nata

LumCAT: 7639-F

Luminaire:

Report No: NATA0100

Test No:

LampCAT: Fortimo DLM 2000

Lamp flux(lm): 1565.0

Number of Lamps: 1

Length(mm): 165

Phm Type: C

Voltage(V): 217.6000

Current(A): 0.1370

Power (W): 29.5000

PF: 0.9860

Ballast type:

Width(mm): 165

Height(mm): 0

Photometric Results

Lumens(lm): 1407.98

Efficiency(%): 89.97%

Lumens(lm)/Power(W): 47.89

Central intensity(cd): 1044.792

Maximum intensity(cd): 1044.792

Angle of maximum intensity: C=0.0 γ =0.0

Beam Angle(50%Imax): [C0/180]Total=68.4

[C90/270]Total=68.4

Field angle(10%Imax): [C0/180]Total=113.5

[C90/270]Total=113.5

Maximum s/h(1/2): C0_180=0.91 C90_270=0.91

Maximum s/h(1/4): C0_180=1.03 C90_270=1.03

Up flux rate of lamp(%): 0.00%

Down flux rate of lamp(%): 90.28%

Up flux rate of LUM(%): - -

Down flux rate of LUM(%): 100.00%

CIE Type : Direct lighting

Output flux ratio in π solid angle : 98.328%

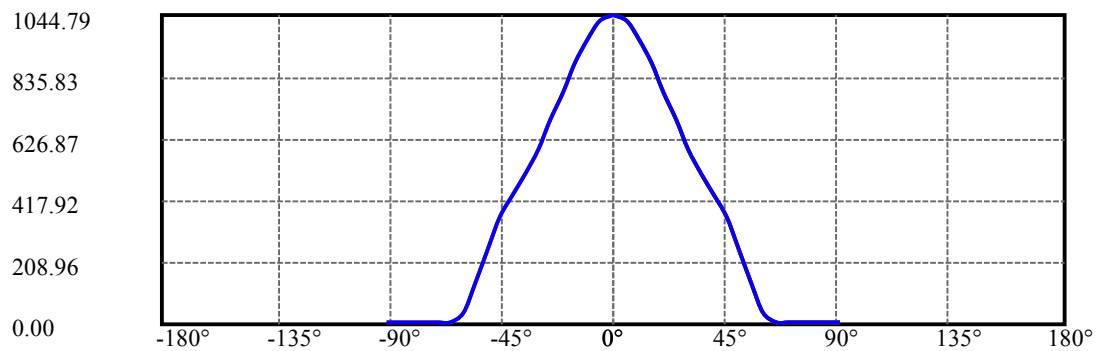
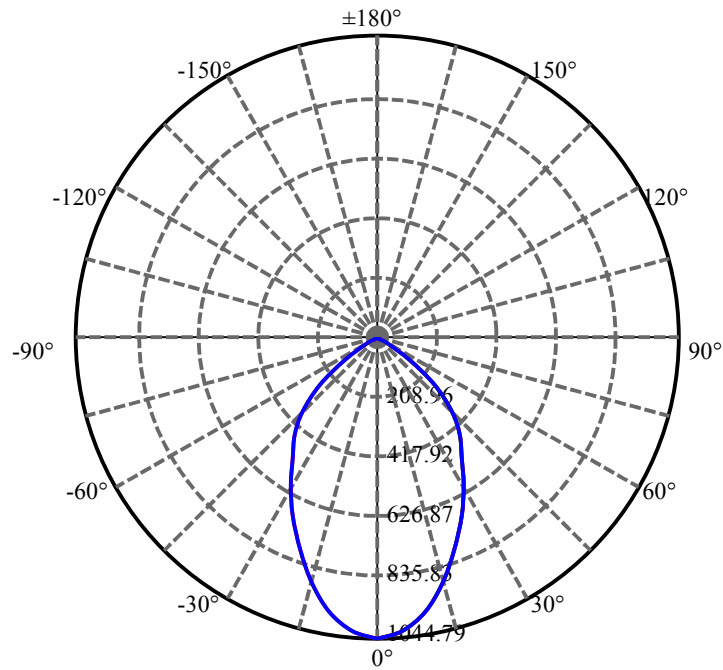
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	1044.792	6.248	6.248	.399%	.444%
5.0	1024.772	48.957	55.205	3.128%	3.921%
10.0	967.458	92.086	147.29	5.884%	10.461%
15.0	882.781	125.239	272.529	8.002%	19.356%
20.0	787.472	147.630	420.16	9.433%	29.841%
25.0	685.039	158.691	578.851	10.140%	41.112%
30.0	593.536	162.670	741.52	10.394%	52.665%
35.0	508.714	159.939	901.46	10.220%	64.025%
40.0	440.878	155.337	1056.797	9.926%	75.057%
45.0	366.352	141.995	1198.792	9.073%	85.142%
50.0	260.967	109.580	1308.371	7.002%	92.925%
55.0	139.134	62.472	1370.844	3.992%	97.362%
60.0	38.808	18.422	1389.266	1.177%	98.671%
65.0	9.050	4.496	1393.762	.287%	98.990%
70.0	7.226	3.722	1397.484	.238%	99.254%
75.0	6.097	3.228	1400.712	.206%	99.484%
80.0	5.568	3.005	1403.718	.192%	99.697%
85.0	5.272	2.879	1406.596	.184%	99.901%
90.0	5.065	1.388	1407.984	.089%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	741.52	47.38%	52.67%
0-40	1056.80	67.53%	75.06%
0-60	1389.27	88.77%	98.67%
0-90	1406.60	89.88%	99.90%
0-120	1406.60	89.88%	99.90%
0-180	1407.98	89.97%	100.00%
60-90	35.75	2.28%	2.54%
90-120	0.00	0.00%	0.00%
90-130	0.00	0.00%	0.00%
90-150	0.00	0.00%	0.00%
90-180	0.00	0.00%	0.00%
0-42.45	1126.39	71.97%	80.00%

ZONAL LUMEN SUMMARY

0-10	147.29
10-20	272.87
20-30	321.36
30-40	315.28
40-50	251.57
50-60	80.89
60-70	8.22
70-80	6.23
80-90	2.88
90-100	0.00
100-110	0.00
110-120	0.00
120-130	0.00
130-140	0.00
140-150	0.00
150-160	0.00
160-170	0.00
170-180	0.00



C0(Max): —————

C0/C180: —————

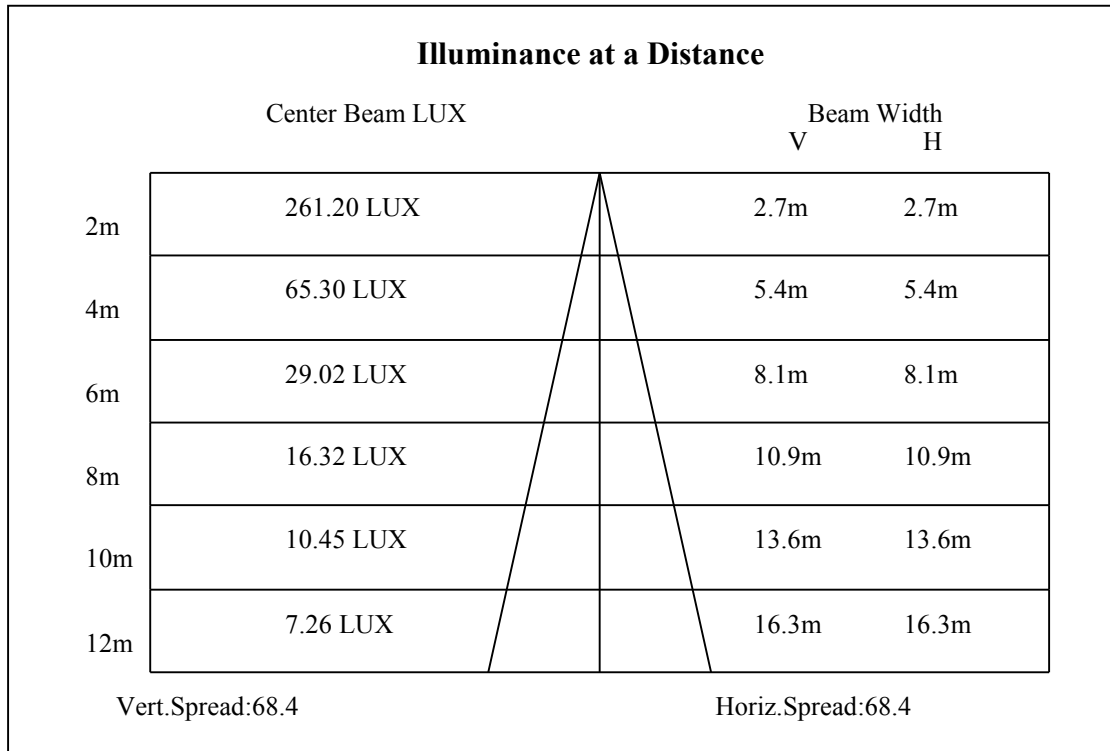
C90/C270: —————

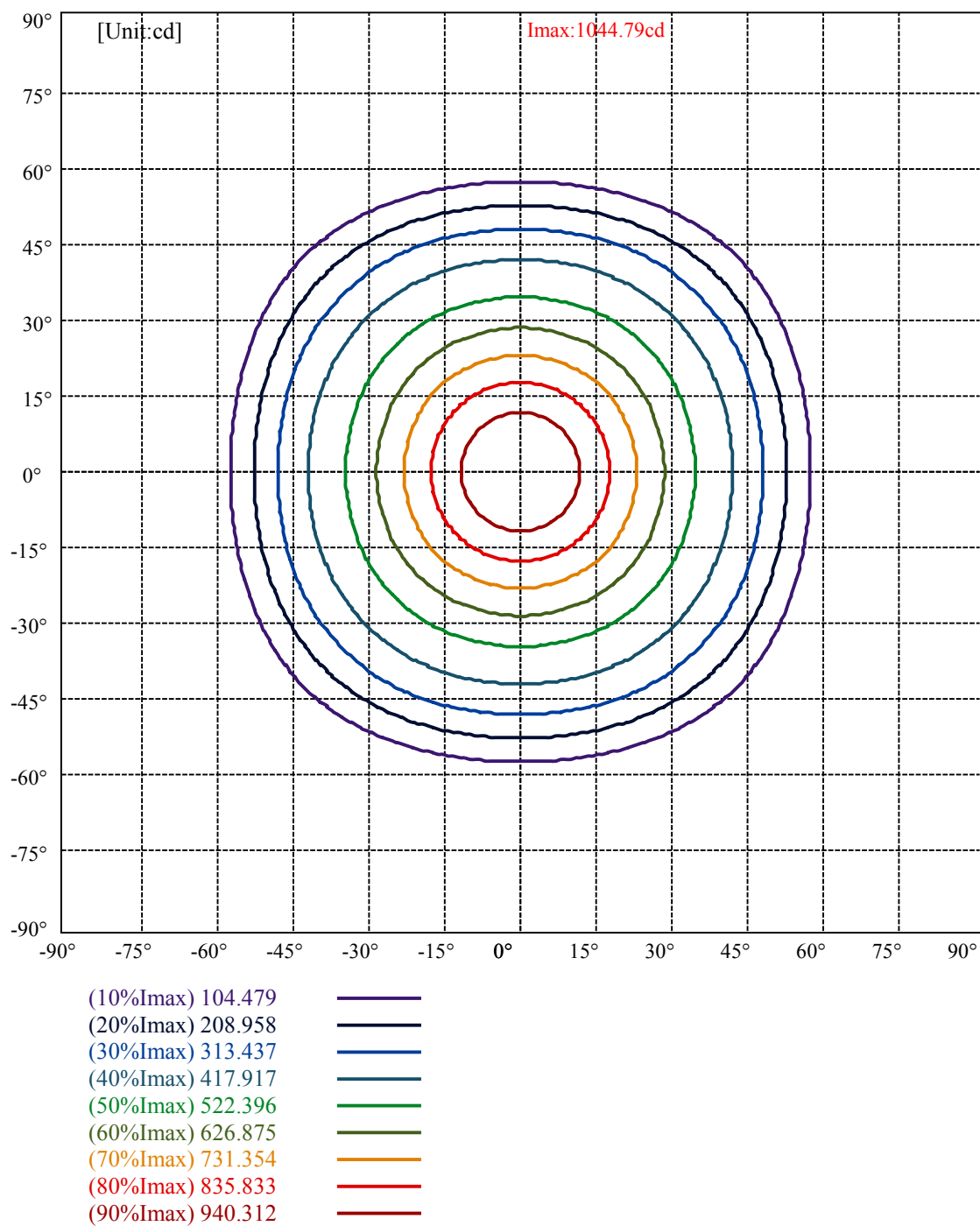
Field angle(10%Imax):C0/180Left:56.7 Right:56.7

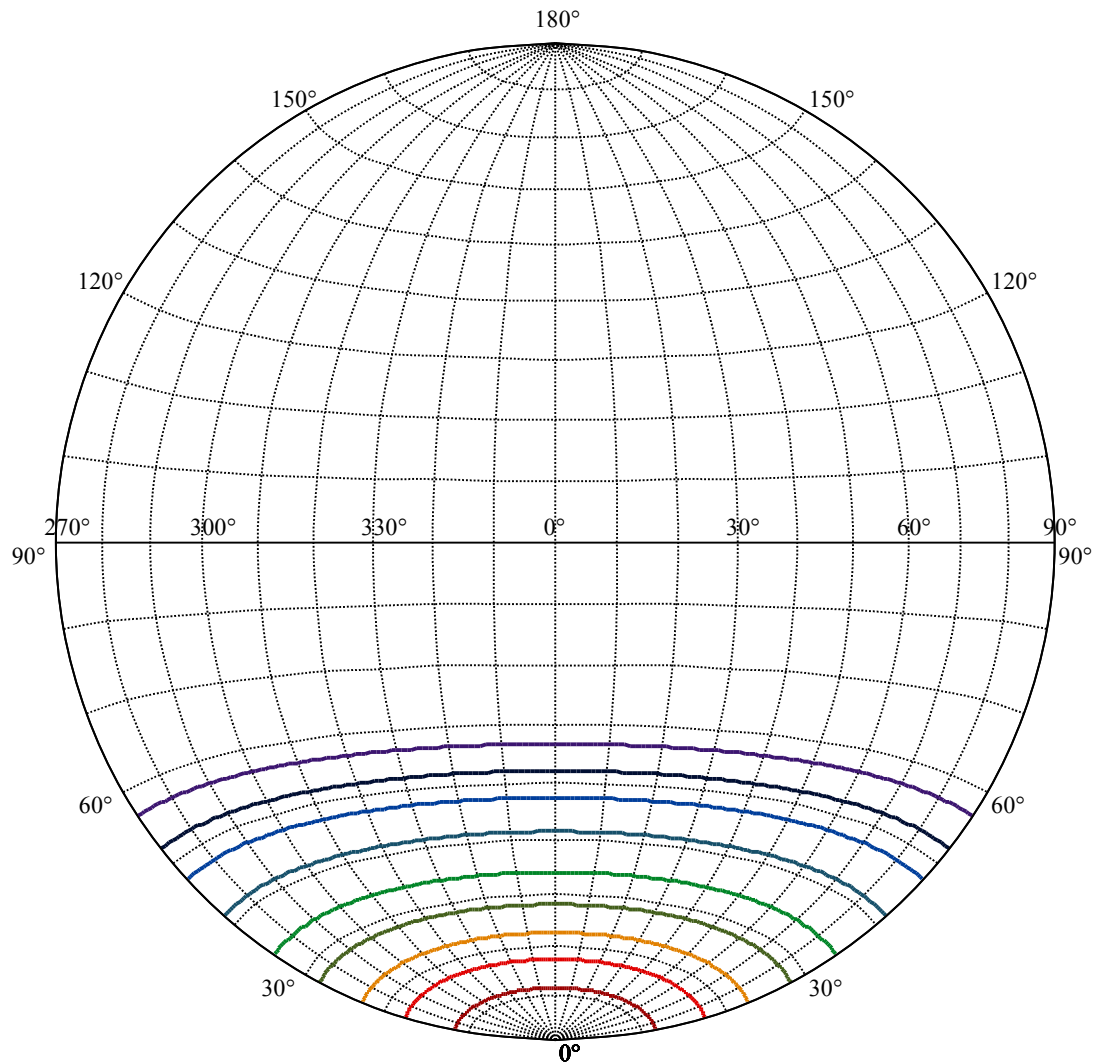
:C90/270Left:56.7 Right:56.7

Beam Angle(50%Imax):C0/180Left:34.2 Right:34.2

:C90/270Left:34.2 Right:34.2







House

[Unit:cd]

Road

Imax:1044.79

(10%Imax) 104.479

(20%Imax) 208.958

(30%Imax) 313.437

(40%Imax) 417.917

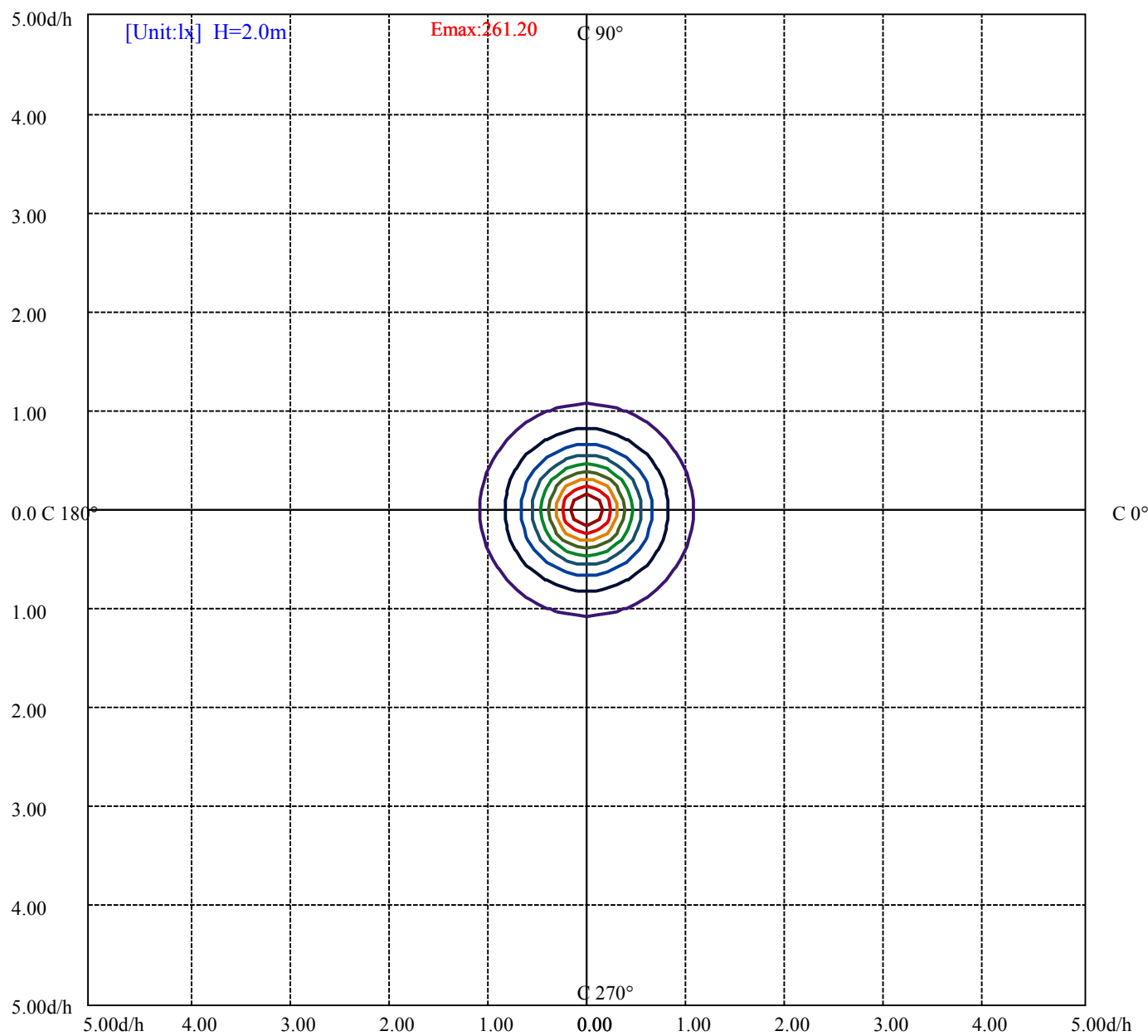
(50%Imax) 522.396

(60%Imax) 626.875

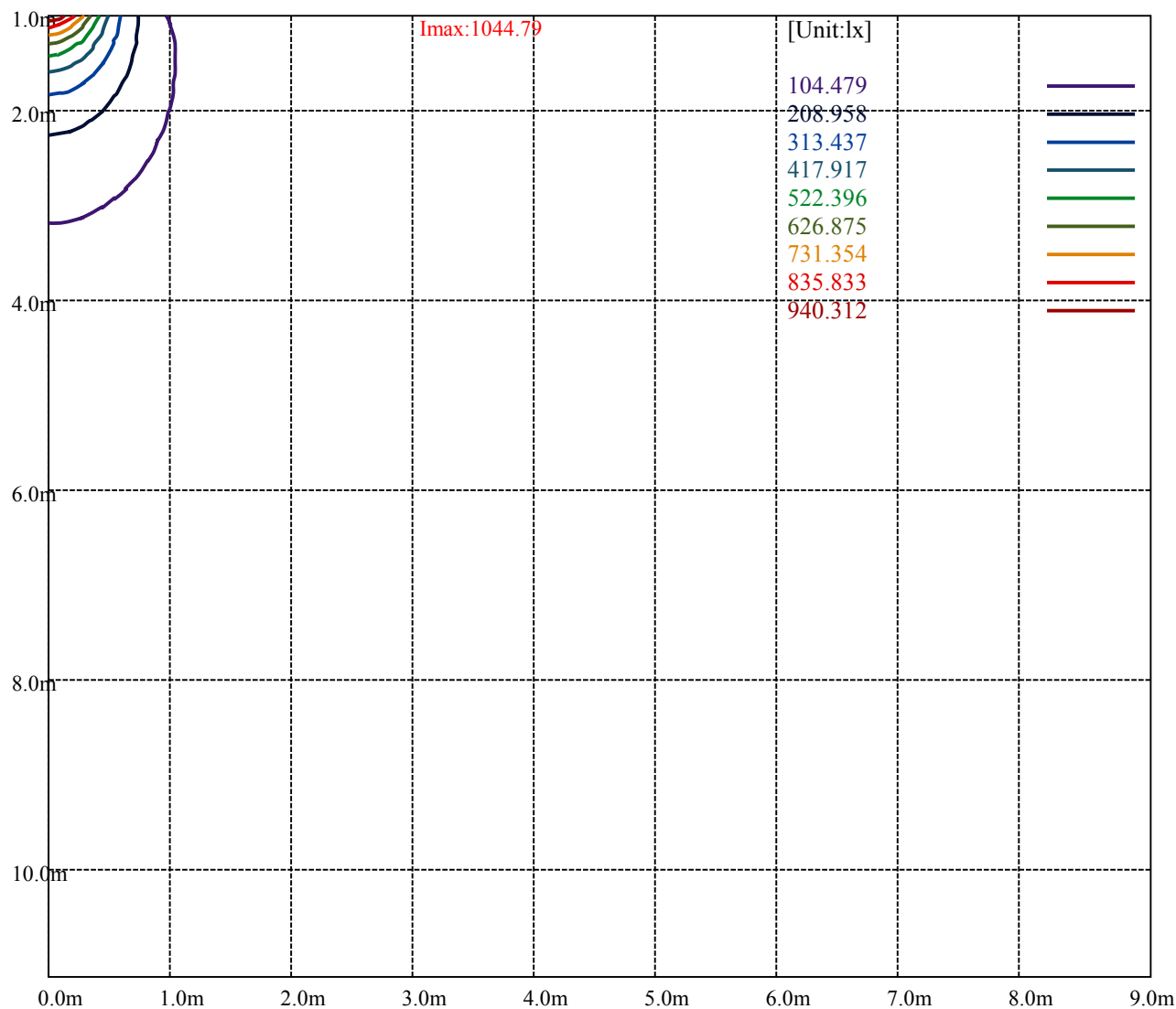
(70%Imax) 731.354

(80%Imax) 835.833

(90%Imax) 940.312



(10%E _{max}) 26.11975	—
(20%E _{max}) 52.2395	—
(30%E _{max}) 78.35925	—
(40%E _{max}) 104.479	—
(50%E _{max}) 130.5988	—
(60%E _{max}) 156.7188	—
(70%E _{max}) 182.8385	—
(80%E _{max}) 208.9583	—
(90%E _{max}) 235.078	—



Luminance Table

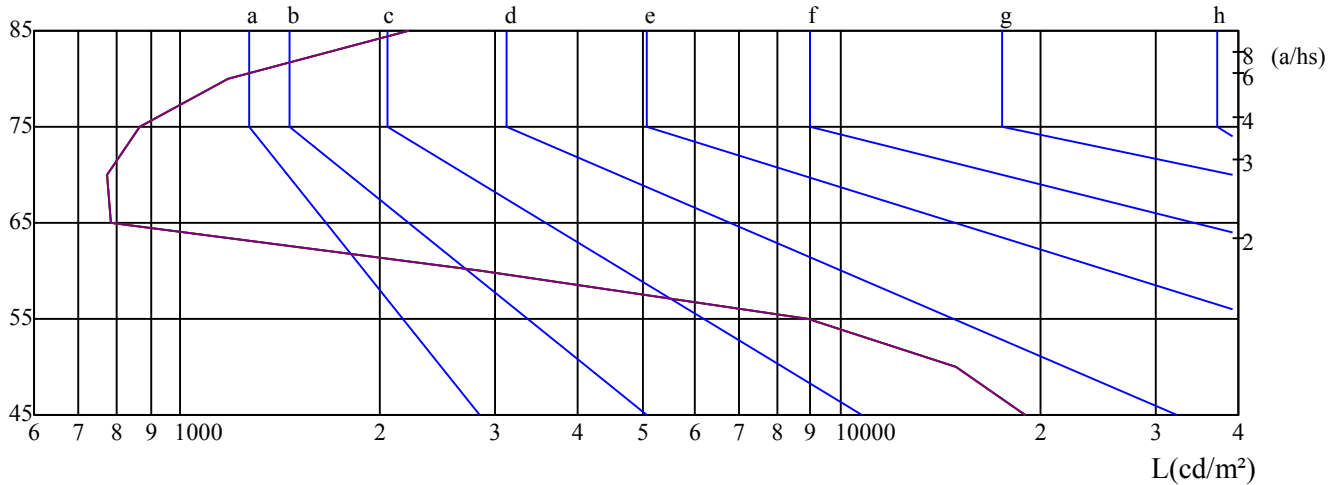
γ	45	50	55	60	65	70	75	80	85
C0	19030	14913	8910	2851	787	776	865	1178	2222
C45	19030	14913	8910	2851	787	776	865	1178	2222
C90	19030	14913	8910	2851	787	776	865	1178	2222

L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
787	787	787	865	865	865	2222	2222	2222

Glare Table

Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	≤ 300				
1.5	B		2000	1000	500	≤ 300			
1.85	C			2000	1000	500	≤ 300		
2.2	D				2000	1000	500	≤ 300	
2.55	E					2000	1000	500	≤ 300
		a	b	c	d	e	f	g	h

Luminance Limiting Curve

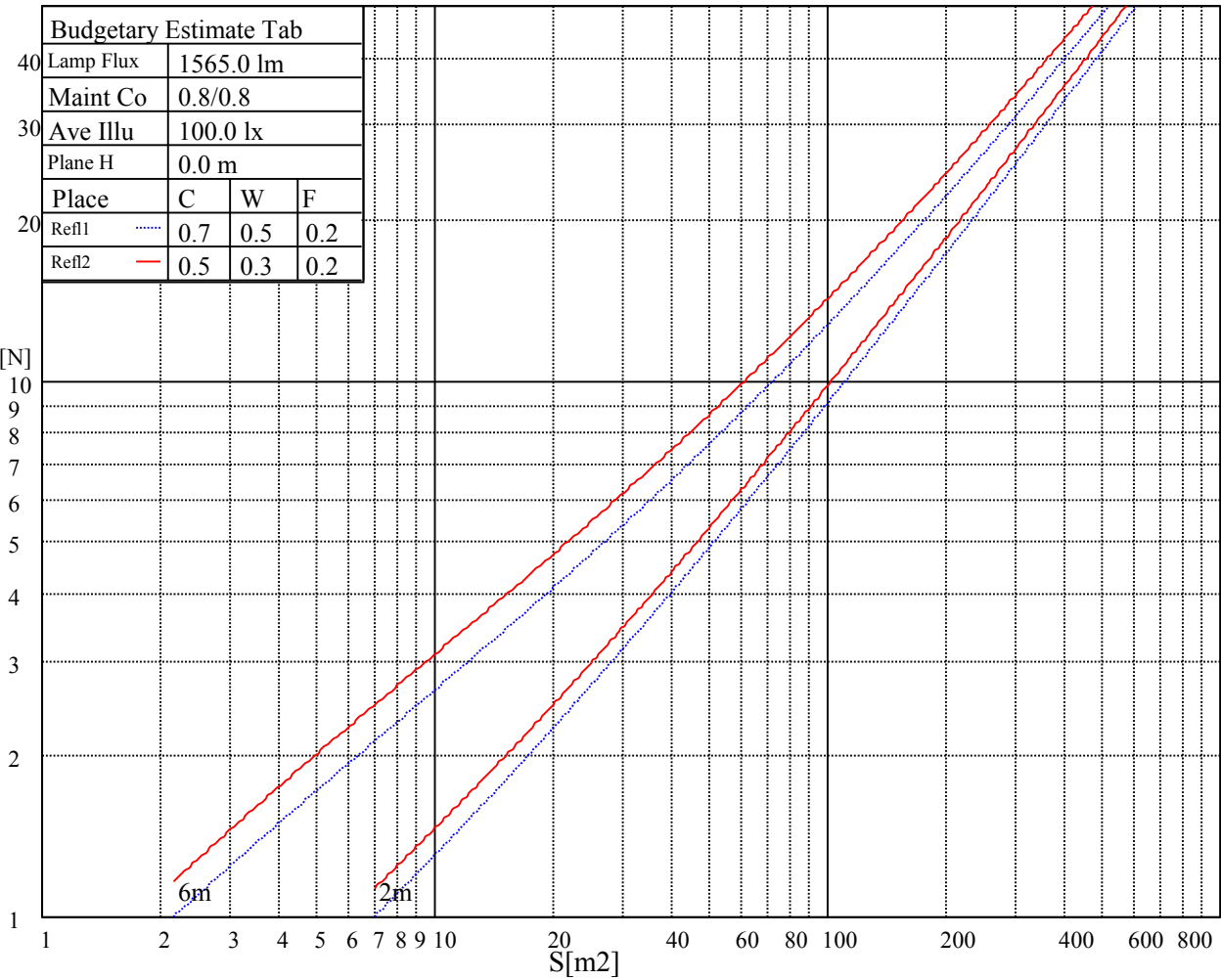
 $\gamma(^{\circ})$ 

C0 ———

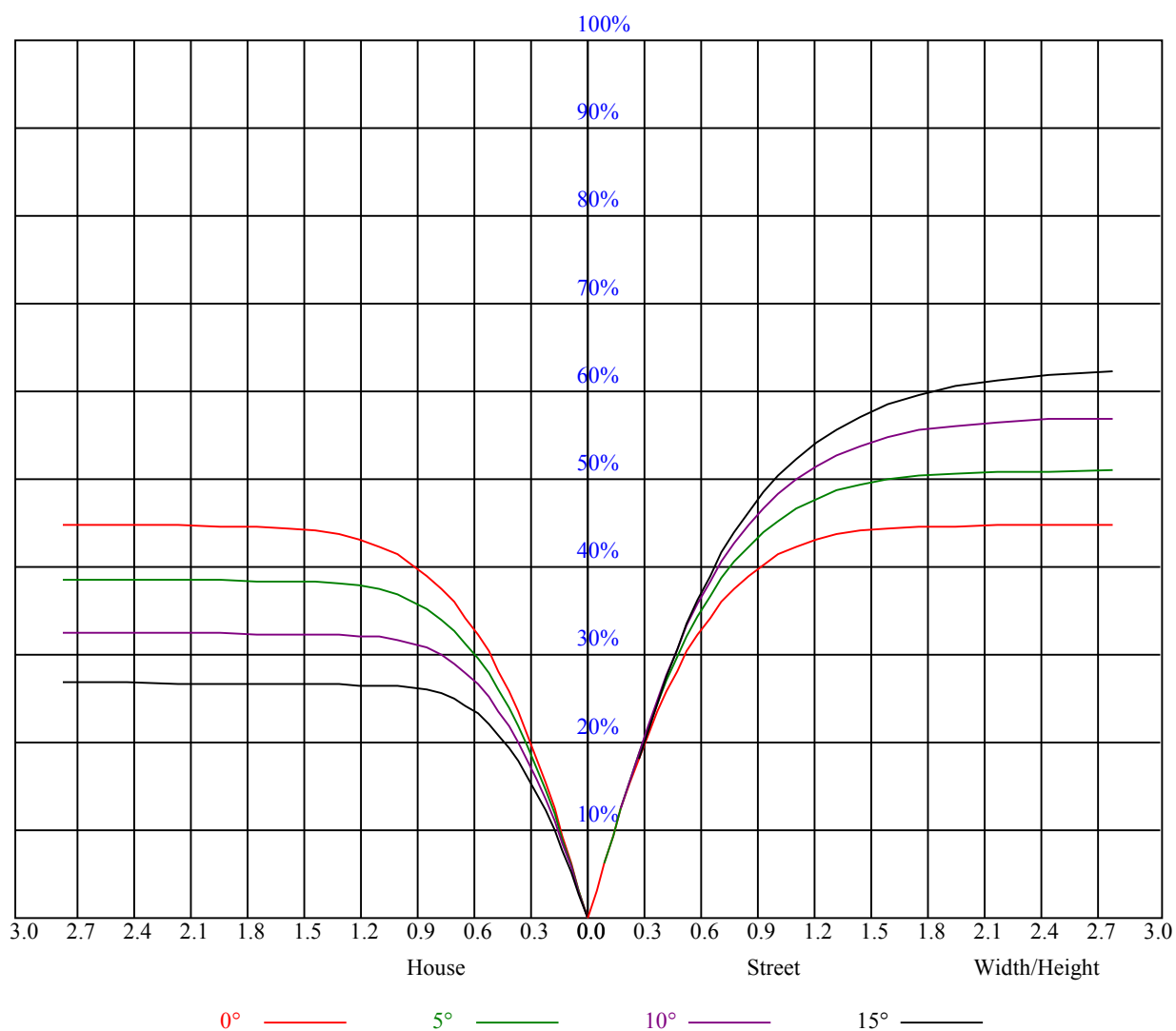
C45 ———

C90 ———

Illumination assessment according UGR												
Rf of Ceiling	70	70	50	50	30	70	70	50	50	30		
Rf of Wall	50	30	50	30	30	50	30	50	30	30		
Rf of Floor	20	20	20	20	20	20	20	20	20	20		
Room dimensions		Viewed crosswise					Viewed endwise					
X	Y											
2H	2H	14.06	15.35	14.43	15.66	15.97	14.14	15.43	14.51	15.74	16.06	
	3H	13.98	15.10	14.36	15.44	15.80	14.05	15.18	14.43	15.51	15.88	
	4H	13.94	14.99	14.35	15.34	15.72	14.02	15.06	14.42	15.41	15.80	
	6H	13.93	14.89	14.35	15.26	15.65	14.00	14.95	14.41	15.33	15.72	
	8H	13.94	14.85	14.37	15.24	15.64	14.01	14.91	14.44	15.30	15.71	
	12H	14.03	14.89	14.46	15.27	15.70	14.08	14.95	14.52	15.33	15.76	
4H	2H	13.87	14.91	14.27	15.26	15.65	13.95	14.99	14.35	15.34	15.73	
	3H	13.81	14.65	14.22	15.05	15.46	13.88	14.72	14.29	15.13	15.53	
	4H	13.78	14.53	14.22	14.95	15.40	13.85	14.60	14.29	15.02	15.46	
	6H	13.81	14.46	14.28	14.91	15.37	13.88	14.52	14.34	14.97	15.43	
	8H	13.85	14.46	14.33	14.90	15.38	13.91	14.51	14.38	14.96	15.43	
	12H	14.00	14.53	14.49	15.02	15.49	14.05	14.58	14.53	15.06	15.54	
8H	4H	13.68	14.28	14.15	14.73	15.20	13.74	14.35	14.22	14.79	15.27	
	6H	13.74	14.24	14.24	14.73	15.22	13.80	14.29	14.30	14.79	15.27	
	8H	13.83	14.28	14.36	14.80	15.29	13.88	14.33	14.41	14.85	15.34	
	12H	14.14	14.54	14.66	15.04	15.61	14.18	14.58	14.69	15.08	15.65	
12H	4H	13.64	14.17	14.13	14.65	15.13	13.71	14.24	14.19	14.72	15.20	
	6H	14.26	14.17	14.24	14.63	15.18	14.32	14.22	14.30	14.69	15.23	
	8H	13.85	14.25	14.36	14.75	15.32	13.90	14.30	14.41	14.80	15.37	
Variation with the observer position at spacings:												
S = 1.0H		1.3/-2.6					1.3/-2.6					
S = 1.5H		2.5/-10.2					2.5/-10.2					
S = 2.0H		4.7/-11.0					4.7/-11.0					
Standard tables:		BK0					BK0					
Uncorrected UGR		1.1					1.1					



RHOCC	80			70			50			30			10			0
RHOW	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0
RCR	COEFFICIENTS OF UTILIZATION RHOFC=20 CU															
0	1.07	1.07	1.07	1.05	1.05	1.05	1.00	1.00	1.00	0.96	0.96	0.96	0.92	0.92	0.92	0.90
1	0.98	0.96	0.93	0.96	0.94	0.92	0.93	0.91	0.89	0.89	0.88	0.86	0.86	0.85	0.84	0.82
2	0.90	0.86	0.82	0.89	0.85	0.81	0.86	0.82	0.80	0.83	0.80	0.78	0.80	0.78	0.76	0.75
3	0.83	0.78	0.73	0.81	0.77	0.73	0.79	0.75	0.72	0.77	0.73	0.70	0.75	0.72	0.69	0.68
4	0.76	0.70	0.66	0.75	0.70	0.66	0.73	0.68	0.65	0.71	0.67	0.64	0.69	0.66	0.63	0.62
5	0.70	0.64	0.60	0.69	0.64	0.59	0.68	0.63	0.59	0.66	0.62	0.58	0.65	0.61	0.58	0.56
6	0.65	0.59	0.54	0.64	0.59	0.54	0.63	0.58	0.54	0.62	0.57	0.53	0.60	0.56	0.53	0.52
7	0.61	0.54	0.50	0.60	0.54	0.50	0.59	0.53	0.50	0.57	0.53	0.49	0.56	0.52	0.49	0.48
8	0.56	0.50	0.46	0.56	0.50	0.46	0.55	0.50	0.46	0.54	0.49	0.46	0.53	0.49	0.45	0.44
9	0.53	0.47	0.43	0.52	0.47	0.43	0.51	0.46	0.42	0.51	0.46	0.42	0.50	0.45	0.42	0.41
10	0.50	0.44	0.40	0.49	0.43	0.40	0.48	0.43	0.40	0.48	0.43	0.39	0.47	0.42	0.39	0.38



Intensity data(cd)										Appendix Page: 15 Total:15	
C/ γ (°)	0.0	5.0	10.0	15.0	20.0	25.0	30.0	35.0	40.0		
0.0	1044.14	1037.92	990.30	918.78	819.84	715.62	625.28	534.38	457.68		
45.0	1043.87	1035.12	985.89	908.60	814.61	712.26	619.77	531.79	461.54		
90.0	1044.70	1016.56	954.02	859.27	773.32	673.73	585.30	506.52	440.01		
135.0	1046.46	1018.43	956.27	870.06	772.77	672.18	584.31	504.70	438.03		
180.0	1044.14	1011.33	943.94	850.57	751.41	655.12	565.65	481.30	422.61		
225.0	1043.87	1011.94	947.08	857.89	758.95	655.01	563.67	481.19	419.03		
270.0	1044.70	1032.58	980.50	900.72	804.04	698.01	601.38	519.13	443.31		
315.0	1046.46	1034.29	981.66	896.37	804.81	698.39	602.92	510.70	444.80		
360.0	1044.14	1037.92	990.30	918.78	819.84	715.62	625.28	534.38	457.68		
C/ γ (°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0		
0.0	393.54	298.85	173.59	61.55	9.74	7.54	6.22	5.62	5.29		
45.0	398.94	304.63	186.92	72.84	8.92	7.21	6.06	5.45	5.18		
90.0	370.75	272.25	145.84	41.57	8.42	7.10	6.17	5.73	5.45		
135.0	366.40	265.26	139.90	37.05	8.81	7.21	6.22	5.78	5.45		
180.0	337.99	225.29	105.43	17.67	8.04	6.61	5.84	5.45	5.29		
225.0	327.53	216.21	92.22	12.99	8.42	6.61	5.67	5.23	4.96		
270.0	366.68	254.09	132.41	31.99	10.08	7.82	6.33	5.62	5.29		
315.0	368.99	251.17	136.76	34.80	9.97	7.71	6.28	5.67	5.29		
360.0	393.54	298.85	173.59	61.55	9.74	7.54	6.22	5.62	5.29		
C/ γ (°)	90.0										
0.0	5.07										
45.0	5.01										
90.0	5.23										
135.0	5.29										
180.0	5.07										
225.0	4.79										
270.0	5.01										
315.0	5.07										
360.0	5.07										